

Product Information

Anti-IDH1 (R132S) antibody, Mouse monoclonal
clone SMab-1, purified from hybridoma cell culture

Catalog Number **SAB4200547**

Product Description

Anti-IDH1 (R132S) (mouse IgG1 isotype) is derived from the hybridoma SMab1 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized a peptide corresponding to the mutation R132S of human IDH1 (GeneID: 3417).¹ The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Anti-IDH1 (R132S) recognizes only human R132S mutated IDH1 and does not cross react with other mutations.¹ The product may be used in several immunochemical techniques including immunoblotting (~ 43 kDa), immunofluorescence, and immunohistochemistry.¹

Eukaryotic cells express three forms of isocitrate dehydrogenase (IDH). These enzymes catalyze the oxidative decarboxylation of isocitrate into α -ketoglutarate (α KG) utilizing either NAD or NADP as co-substrates.² A member of this family, IDH1, is the human cytoplasmic NADP-specific enzyme. Its subcellular localization was shown to be in both peroxisomes and the cytoplasm.³ Although the function and structure of the protein has been well characterized, mutations in the gene have only recently been implicated in cancer after a genome-wide mutation study of glioblastomas, acute myeloid leukemias (AML) and chondrosarcomas.⁴ Mutations in *IDH1* are specific to Arg¹³² (R132) and endow them with the function of generating 2-hydroxyglutarate (2HG) instead of α KG. This product alters gene transcription through effects on DNA and histone methylation.⁵ Several IDH1 mutations exist, including R132H, R132C, R132S, R132G and R132L, each may result in different tumor type with varied malignant progression. Hence, antibodies that recognize the IDH1^{R132} mutations are important for both research and clinical purposes.⁶ IDH1-R132S specific monoclonal antibodies were suggested as a tool for diagnosis of mutation-bearing gliomas.¹

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For extended storage, freeze at -20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.25-0.5 μ g/mL is recommended using total cell extracts of HEK-293T cells overexpressing IDH1^{R132S}.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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3. Geisbrecht, B.V., and Gould, S.J., *J. Biol. Chem.*, **274**, 30527-30533 (1999).
4. Borodovsky, A., et al., *Curr. Opin. Oncol.*, **24**, 83-89 (2012).
5. Lu, C., et al., *Nature*, **483**, 474-478 (2012).
6. Meyer, J., et al., *Brain Pathol.*, **20**, 298-300 (2010).

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